

## CLAIMS

1. An information recording processing device characterized by comprising:

a modulated data generating unit for generating a modulated recording frame by performing data modulation processing on data to be recorded;

recording frame characteristic determining means for determining a data characteristic of constituent data of an additional data-corresponding recording frame; and

an additional data-corresponding data controlling unit for controlling constituent bits of a data-changeable data part on a basis of a constituent bit value of additional data and the data characteristic of the constituent data of said additional data-corresponding recording frame.

2. The information recording processing device as claimed in claim 1,

wherein in said additional data-corresponding data controlling unit, the data part whose constituent bits are controlled is user control data (UCD).

3. The information recording processing device as claimed in claim 1,

wherein the data characteristic of the constituent data of said additional data-corresponding

recording frame is a characteristic of whether parity of the constituent data of the recording frame is even parity or odd parity, and

                  said additional data-corresponding data controlling unit controls the constituent bits of the data-changeable data part on a basis of two conditions of whether the constituent bit value of said additional data is 0 or 1 and whether the parity of the constituent data of said additional data-corresponding recording frame is even parity or odd parity.

4. The information recording processing device as claimed in claim 1,

                  wherein said additional data-corresponding data controlling unit performs control to set parity of the data-changeable data part to one of odd parity and even parity.

5. The information recording processing device as claimed in claim 1,

                  wherein said additional data is set as constituent information of at least one of encryption key information, encryption key generating information, content reproduction control information, and content copy control information for contents stored on said information recording medium.

6. The information recording processing device as claimed in claim 1,

wherein said modulated data generating unit generates the modulated recording frame by performing a data conversion process satisfying RLL (1, 7) as a run length rule.

7. The information recording processing device as claimed in claim 1,

wherein said modulated data generating unit performs a modulated recording frame generating process including a process of conversion of two-bit information into three-bit information.

8. An information reproduction processing device for reproducing information stored on an information recording medium, said information reproduction processing device characterized by comprising:

a demodulating unit for demodulating data read from the information recording medium; and

an additional data decoding unit for determining data characteristics of an additional data-corresponding recording frame and specific user control data read from the information recording medium, and obtaining additional data constituent bit information on a basis of the two determined data characteristics.

9. The information reproduction processing device as claimed in claim 8,  
wherein in said additional data decoding unit, a data part whose data characteristic is determined is user control data (UCD).

10. The information reproduction processing device as claimed in claim 8,  
wherein the data characteristic of constituent data of said additional data-corresponding recording frame is a characteristic of whether parity of the constituent data of the recording frame is even parity or odd parity, and

    said additional data decoding unit obtains the additional data constituent bit information on a basis of two data characteristic determinations of whether the parity of the constituent data of said additional data-corresponding recording frame is even parity or odd parity and whether parity of constituent data of the specific user control data is even parity or odd parity.

11. The information reproduction processing device as claimed in claim 8,  
wherein at least one of encryption key information, encryption key generating information, content reproduction control information, and content

copy control information for contents stored on said information recording medium is generated on a basis of the obtained additional data constituent bit information.

12. An information recording medium storing:  
modulated data based on a plurality of recording frames; and

user control data having a data characteristic determined on a basis of a constituent bit value of additional data and a data characteristic of constituent data of a specific additional data-corresponding recording frame selected from the plurality of recording frames.

13. The information recording medium as claimed in claim 12,

wherein the data characteristic of the constituent data of said additional data-corresponding recording frame is a characteristic of whether parity of the constituent data of the recording frame is even parity or odd parity, and

said user control data has the data characteristic determined according to two conditions of whether the constituent bit value of said additional data is 0 or 1 and whether the parity of the constituent data of said additional data-corresponding recording frame is

even parity or odd parity.

14. The information recording medium as claimed in claim 12,

wherein the data characteristic determined for said user control data is a data characteristic of whether parity of constituent data of said user control data is even parity or odd parity, and

the user control data having the parity determined on a basis of the constituent bit value of said additional data and the data characteristic of the constituent data of the specific additional data-corresponding recording frame selected from said plurality of recording frames is stored.

15. The information recording medium as claimed in claim 12,

wherein said additional data is stored as constituent information of at least one of encryption key information, encryption key generating information, content reproduction control information, and content copy control information for contents stored on said information recording medium.

16. The information recording medium as claimed in claim 12,

wherein the data based on a modulated recording

frame generated by performing a data conversion process satisfying RLL (1, 7) as a run length rule is recorded.

17. The information recording medium as claimed in claim 12,

wherein the data based on a modulated recording frame generated by performing a process of converting two-bit information into three-bit information is recorded.

18. An information recording processing method comprising:

an additional data-corresponding data controlling step of controlling constituent bits of a data-changeable data part on a basis of a constituent bit value of additional data and a data characteristic of constituent data of an additional data-corresponding recording frame; and

a modulated data generating step of generating a modulated recording frame by performing data modulation processing on data to be recorded.

19. The information recording processing method as claimed in claim 18,

wherein in said additional data-corresponding data controlling step, the data part whose constituent bits are controlled is user control data (UCD).

20. The information recording processing method as claimed in claim 18,

wherein the data characteristic of the constituent data of said additional data-corresponding recording frame is a characteristic of whether parity of the constituent data of the recording frame is even parity or odd parity, and

said additional data-corresponding data controlling step controls the constituent bits of the data-changeable data part on a basis of two conditions of whether the constituent bit value of said additional data is 0 or 1 and whether the parity of the constituent data of said additional data-corresponding recording frame is even parity or odd parity.

21. The information recording processing method as claimed in claim 18,

wherein said additional data-corresponding data controlling step performs control to set parity of the data-changeable data part to one of odd parity and even parity.

22. The information recording processing method as claimed in claim 18,

wherein said additional data is constituent information of at least one of encryption key information,

encryption key generating information, content reproduction control information, and content copy control information for contents stored on said information recording medium.

23. The information recording processing method as claimed in claim 18,

wherein said modulated data generating step generates the modulated recording frame by performing a data conversion process satisfying RLL (1, 7) as a run length rule.

24. The information recording processing method as claimed in claim 18,

wherein said modulated data generating step performs a modulated recording frame generating process including a process of conversion of two-bit information into three-bit information.

25. An information reproduction processing method for reproducing information stored on an information recording medium, said information reproduction processing method characterized by comprising:

a demodulating step of demodulating data read from the information recording medium; and  
an additional data decoding step of determining

data characteristics of an additional data-corresponding recording frame and specific user control data read from the information recording medium, and obtaining additional data constituent bit information on a basis of the two determined data characteristics.

26. The information reproduction processing method as claimed in claim 25,

wherein in said additional data decoding step, a data part whose data characteristic is determined is user control data (UCD).

27. The information reproduction processing method as claimed in claim 25,

wherein the data characteristic of constituent data of said additional data-corresponding recording frame is a characteristic of whether parity of the constituent data of the recording frame is even parity or odd parity, and

said additional data decoding step obtains the additional data constituent bit information on a basis of two data characteristic determinations of whether the parity of the constituent data of said additional data-corresponding recording frame is even parity or odd parity and whether parity of constituent data of the specific user control data is even parity or odd parity.

28. The information reproduction processing method as claimed in claim 25, further comprising a step of generating at least one of encryption key information, encryption key generating information, content reproduction control information, and content copy control information for contents stored on said information recording medium on a basis of the obtained additional data constituent bit information.

29. A computer program for performing an information recording process, said computer program comprising:

an additional data-corresponding data controlling step of controlling constituent bits of a data-changeable data part on a basis of a constituent bit value of additional data and a data characteristic of constituent data of an additional data-corresponding recording frame; and

a modulated data generating step of generating a modulated recording frame by performing data modulation processing on data to be recorded.

30. A computer program for reproducing information stored on an information recording medium, said computer program comprising:

a demodulating step of demodulating data read

from the information recording medium; and  
an additional data decoding step of determining  
data characteristics of an additional data-corresponding  
recording frame and specific user control data read from  
the information recording medium, and obtaining  
additional data constituent bit information on a basis of  
the two determined data characteristics.